

AQUARIUM TANK

This invention relates to an aquarium tank for keeping freshwater or tropical sea fish as aquarium fish.

Japanese Utility Model Publication 44-9505 and Japanese Utility Model Publication 44-9506 disclose aquarium tanks for keeping fish.

In the disclosed tanks, wiring and tubing necessary for the aquarium equipment are accommodated in a tank support, two tubes are provided on the opposite sides of the tank, the wiring and tubing are passed through one of the tubes, an illuminating element is located atop a plate provided on top of the tank, and the wiring and tubing inserted through the tube noted above are led along the plate to the other tube.

With the tank having this construction, the wiring and tubing are concealed to a certain extent by the tubes. However, it is necessary to provide a filter, a thermostat, a heater, etc. in the tank. Further, since wiring and tubing extending from the support are inserted into the tubes inside the tank, the tank cannot be separated from the support. Therefore, the work of changing the tank water and cleaning the inside of the tank is very troublesome.

This invention was achieved in the light of the above problem of the prior art aquarium tanks, and its object is to provide an aquarium tank with electric wiring and water circulation tubing which cannot be seen from the outside, thus providing satisfactory appearance, and which enables changing of water and the cleaning of inside of the tank to be done easily.

To attain the above object of the invention, there is provided an aquarium tank comprising a frame

open at least on the front and at the top, a tank accommodated in the frame and open at the top, an openable and closable lid hinged to the open top of the frame, the frame and tank having substantially the same height, water treatment means provided in the tank and including a filtering mechanism and a pumping mechanism, and electric means provided on the lid and including illuminating means, terminals and switches, the electric components of the water treatment means being connected to the electric means of the lid.

One embodiment of the invention is described in detail below with reference to the accompanying drawings, in which:

Figure 1 is an exploded perspective view showing one embodiment of the aquarium tank according to the invention;

Figure 2 is a perspective view showing the tank shown in Figure 1 in the assembled state;

Figure 3 is a side view showing the tank shown in Figure 2;

Figure 4 is a perspective view showing the tank shown in Figure 2 with the frame removed;

Figure 5 is a sectional view showing the tank shown in Figure 2 with a lid opened;

Figure 6 is a perspective view showing the tank shown in Figure 2 with the lid opened;

Figure 7 is a sectional view taken along line VII-VII in Figure 3;

Figure 8 is a perspective view showing the tank according to the invention with the lid partly broken away.

Referring to the drawings, an aquarium tank 1 according to the invention has a frame 2 made of a synthetic resin, a tank 11 installed in the frame 2 and

open at the top and a lid 21 openably and closably hinged to an open top of the frame 2. Water treatment means 31 is removably provided in the tank 11.

The frame 2 has at least a bottom 3 and a back wall 4. In the illustrated embodiment, the frame 2 is provided with side walls 5 at the rear portions of the opposite sides but is open on the front, top and part of the sides. Upper and lower beam members 6 and 7 are provided on the open front and sides.

The tank 11 noted above is like a housing open at the top and is made of a transparent synthetic resin or glass. The tank 11 has substantially the same outer dimensions as the inner dimensions of the frame 2 or, particularly, the same size as the frame 2, so that it can be accommodated in the frame 2.

The lid 21 noted above is a plate-like member made of a metal or a synthetic resin and has a large thickness. Its rear edge is hinged by left and right hinges 22 to the upper edge of the back wall 4. It can close the open top of the frame 2 and can be turned upwards to fully open the top of the frame 2.

The underside of a front portion of the lid 21 is provided with a fluorescent lamp 23 serving as an illuminator for illuminating the space below itself, and an inner rear portion is provided with an electric means 26 including a transformer 24 and terminals 25 for the illuminator 23 as shown in Figure 8. A power supply cord 27 is connected to the electric means 26. As shown in Figure 2, the outer surface of the lid 21 is provided with a switch 28 for turning on and off the power supply to electric components connected to the terminals 25.

The water treatment means 31 has a case which is laterally elongate and is open at the top. The lateral width of the case is substantially the same as

the lateral width of the inner space of the tank 11. The inner space of the case includes a first filtering chamber 33 communicated with the outside through slits 32, a second filtering chamber 36 formed adjacent to the first filtering chamber 33 and communicated with the same through a plurality of small holes 35 formed in an upper portion of a partitioning member 34, a heating chamber 38 formed below the second filtering chamber 36 and communicated with the same through a plurality of small holes 37 formed in the bottom of the second filtering chamber 36 and a pumping chamber 39 formed above an end portion of the heating chamber 38. The heating chamber 38 and pumping chamber 39 are communicated with each other through a hole 41 formed in bottom 40 of the pumping chamber 39.

The first and second filtering chambers 33 and 36 are filled with filtering material, a heater 42 with a thermostat is mounted in the heating chamber 38, and a pump 43 is accommodated in the pumping chamber 39. A discharge tube 44 is led upwardly from the pump 43 to a hole 45 formed in an upper portion of the water treatment means 31, and water forced through the discharge tube 44 is discharged through the hole 45 to the outside.

The case of the water treatment means 31 thus accommodates a filtering mechanism constituted by the first and second filtering chambers 33 and 36, a pumping mechanism constituted by the pump 43 provided in the pumping chamber 39 and the heater 42 mounted in the heating chamber 38.

The water treatment 31 is disposed in a rear portion of the inner space of the tank 11. In this state, the cord 46 of the heater 42 and the cord 47 of the pump 43 are connected to the terminals 25 of the

electric means 26 and also to the switch 28.

When the aquarium tank 1 of the aforesaid construction is used to keep fish, the tank 11 is accommodated in the frame 2 and fresh or sea water (depending on the kind of fish to be kept) is run into the tank 11. Then, the pump 43 is driven by turning on the switch 28 for pumping water up is withdrawn into the tank 11 and, via the slits 32, circulated through the first and second filtering chambers 33 and 36, the heating chamber 38 and the pumping chamber 39 in the mentioned order. Water circulated through the heating chamber 38 is heated by the heater 42 operated by turning on the switch 28, thus maintaining the water in the tank 11 at an appropriate temperature at all times.

Thus, water in the tank 11 is continuously cleaned by the filtering means as it is circulated while being maintained at an appropriate temperature by the heater 42, and thus it is possible to keep the fish under optimum conditions. To change the water in the tank 11, the lid 21 is opened, then the water treatment means 31 is removed from the tank 11, then the tank 11 is removed from the frame 2, and the water in the tank 11 is discharged. When the filtering material in the filtering chambers of the filtering means becomes contaminated, the water treatment means 31 is removed from the tank 11, the contaminated filtering material is removed from the filtering chambers 33 and 36, and new filtering material is inserted in the filtering chambers.

While the invention has been described in conjunction with a preferred embodiment thereof, the embodiment is by no means limitative and can be variously changed and modified without departing from the scope of the invention as set forth in the claim.

As has been shown in the foregoing, according to the invention a tank is accommodated in a frame, water treatment means including a filtering mechanism and a pumping mechanism is provided in the tank, and a lid is provided with illumination means and other electric means, thus functionally disposing mechanisms essential for the keeping of fish. Thus, electric components, tubing, pump, fluorescent lamp and other parts are located randomly at different parts of the tank but can be neatly arranged for keeping fish. Further, since the electric wiring and other parts are substantially concealed, satisfactory appearance can be obtained, thus enhancing the commercial value and practical value of the aquarium tank.

CLAIMS



1. An aquarium tank comprising a frame open at least on the front and at the top, a tank accommodated
5 in said frame and open at the top, an openable and closable lid hinged to the open top of said frame, said frame and tank having substantially the same height, water treatment means provided in said tank and including a filtering mechanism and a pumping
10 mechanism, and electric means provided on said lid and including illuminating means, terminals and switches, said water treatment means having electric components connected to said electric means of said lid.
 - 15 2. An aquarium tank substantially as hereinbefore described with reference to the accompanying drawings.
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